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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,023	02/09/2004	Ronald W. Gilbert	E-1673 (130105.409)	6956

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EXAMINER	
AGBOTTAH, AWUDZI Z	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/775,023	GILBERT ET AL.	
	Examiner	Art Unit	
	Awudzi Z. Agbottah	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/09/2004, 1/17/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements submitted on February 9, 2004 and January 17, 2006 have been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 7, 12, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. **(United States Patent Application Publication No. US 2006/0082445 A1)** in view of Diorio et al. **(United States Patent Application Publication No. US 2006/0145855 A1).**

5. Consider claim 1. O'Toole et al. discloses an RFID tag (radio frequency transponder) comprised of an antenna that returns continuous wave signals sent by an RFID reader via continuous wave backscatter **(Page 23, Paragraph 385, Lines 1-13)**.

In addition O'Toole discloses a transmitter (modulation circuit) coupled to an antenna that generates modulated backscatter schemes in received radio signals **(Page 12, Paragraph 280)**.

O'Toole et al. additionally discloses a micro controller/microprocessor coupled to an antenna via a transmitter **(Figure 5; Page 12, Paragraph 279)**, configured to receive (monitor) inputs on an input pin **(Page 13, Paragraph 287, Lines 1-10)**, and generate

modulated signals from the transmitter (modulation circuit) in response to an input signal **(Page 12, Paragraph 279)**.

O'Toole et al. discloses the claimed invention but fails to disclose operating power supplied by received radio-frequency signals. However Diorio et al. discloses and RFID reader providing power to an passive RFID tag (transponder) via communication (received radio signals) **(Page 9, Paragraph 90, Lines 9-12)**. In light of Diorio et al. it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole et al. and Diorio et al. for the purpose of having a smaller sized RFID tag that can be more easily implemented in commercial products than active RFID tags that are larger in size.

6. Consider claim 7. O'Toole et al. discloses an interrogator device for transmitting (generating) and receiving radio frequency commands (radio-frequency signals) **(Page 13, Paragraph 286, Lines1-4)**.

Additionally O'Toole et al. discloses a transponder device **(Page 11, Paragraph 270)** comprising an antenna that receives radio frequency signals **(Page 12 Paragraph 280, Lines 4-16)** and returns radio frequency signals via continuous wave backscatter **(Page 23, Paragraph 385, Lines 1-13)**.

O'Toole et al. discloses an integrated circuit consisting of a transmitter (modulation circuit) that modulates signals in response to received signals **(Page 12, Paragraph 279)**.

O'Toole et al. additionally discloses a micro controller/microprocessor coupled to an antenna via a transmitter **(Figure 5)**, configured to receive (monitor) inputs on an input pin **(Page 13, Paragraph 287, Lines 1-10)**, and generate modulated signals from the transmitter (modulation circuit) in response to an input signal **(Page 12, Paragraph 279)**.

O'Toole et al. discloses the claimed invention but fails to disclose operating power supplied by received radio-frequency signals. However Diorio et al. discloses and RFID reader providing power to a passive RFID tag (transponder) via communication (received radio signals) **(Page 9, Paragraph 90, Lines 9-12)**. In light of Diorio et al. it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole et al. and Diorio et al. for the purpose of having a smaller sized RFID tag that can be more easily implemented in commercial products than active RFID tags that are larger in size.

7. Consider claim 12 as applied to claim 7 above. O'Toole et al. discloses a bias voltage and current generator (energy storage device) **(Figure 5)**, but fails to disclose the energy storage device configured to receive and store energy from the received radio-frequency signals. However Diorio et al. discloses an RFID tag with a power source (energy storage device) **(Figure 1)** that is powered by the radio-frequency signals transmitted by the RFID reader **(Page 9, Lines 9-14)**. In light of Diorio et al. it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole

et al. and Diorio et al. for the purpose of having a smaller sized RFID tag that can be more easily implemented in commercial products than active RFID tags that are larger in size.

8. Consider claim 14. O'Toole et al. discloses an interrogator device that transmits (generates) radio frequency signals **(Page 13, Paragraph 286, Lines 1-4)**, and a RFID device for receiving a modulated radio frequency signal **(Page 13, Paragraph 287, Lines 10-19)**.

Additionally O'Toole et al. discloses a transponder device **(Page 11, Paragraph 270)** comprising an antenna that receives radio frequency signals **(Page 12 Paragraph 279, Lines 4-16)** and an integrated circuit that transmits a modulated radio frequency signal **(Page 12, Paragraph 279)**.

O'Toole et al. additionally discloses a micro controller/microprocessor coupled to an antenna via a transmitter **(Figure 5; Page 12, Paragraph 279)**, configured to receive (monitor) inputs on an input pin **(Page 13, Paragraph 287, Lines 1-10)**, and generate modulated signals from the transmitter (processor) in response to an input signal **(Page 12, Paragraph 279)**.

O'Toole et al. lastly discloses responding (processing) to radio frequency commands (input signal) received from the input pin **(Page 13. Paragraph 287, Lines 9-19)**.

O'Toole et al. discloses the claimed invention but fails to disclose "...processing means adapted to extract operating power from the received radio-frequency signals..."

However, Diorio et al. discloses an RFID tag that receives it's power from radio-frequency signals transmitted by and RFID reader **(Page 9, Lines 9-14)**. In light of Diorio et al., it would be obvious to combine the teachings of O'Toole et al., and Diorio et al. for the purpose of allowing for smaller size of the RFID tag and lowering manufacturing cost.

9. Consider claim 15 as applied to claim 14 above. O'Toole et al. discloses an RFID device that receives signals from an interrogator device and output signals are transmitted via an output pin **(Page 13, Paragraph 289)**.

10. Consider claim 16 as applied to claim 14. O'Toole et al. discloses an input pin **(Page 13, Paragraph 287, Lines 1-12)** and an output pin **(Page 13, Paragraph 289)** which are connected to an RFID reader/interrogator via radio signals.

11. Consider claim 17, as applied to claim 14. O'Toole et al. discloses a bias voltage and current generator (#42) (means of storing electrical power) coupled to the micro controller/microprocessor (#34) **(Figure 5)**.

12. Consider claim 18 as applied to claim 17 above. O'Toole et al. discloses the claimed invention but fails to disclose "...wherein the storing means is configured to receive and store electrical energy from the received radio-frequency signals." However Diorio et al. discloses an RFID tag with a power source (storing means) **(Figure 1)** that

is configured to store electrical energy extracted from the radio-frequency signals transmitted by the RFID reader **(Page 9, Lines 9-14)**. In light of Diorio et al. it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole et al. and Diorio et al. for the purpose of having a smaller sized RFID tag that can be more easily implemented in commercial products than active RFID tags that are larger in size.

Claims 2,3,6,8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. **(United States Patent Application Publication No. US 2006/0082445 A1)** in view of Diorio et al. **(United States Patent Application Publication No. US 2006/0145855 A1)** and in further view of Weissman et al. **(United States Patent Application Publication No. US 2002/0039885 A1)**.

13. Consider claims 2 and 8 as applied to claims 1and 7 above. O'Toole et al. and Diorio et al. disclose the claimed invention but fail to disclose "...wherein the at least one input pin comprises at least one input-and-output pin, and wherein the microprocessor circuit is configured to generate an output on the at least one input-and-output pin in response to the received radio-frequency signals." However Weissman et al. discloses a two-way port for receiving and transmitting radio frequency signals **(Page 2, Paragraph 33)**. In light of Weissman et al., it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole et al. and Weissman et al. for the purpose of simplifying design.

14. Consider claims 3 and 9, as applied to claims 2 and 8. O'Toole et al. as modified by Diorio et al. and Weissman et al. disclose a power supply (electrical energy storage device) that supplies power to the disclosed integrated circuit in which the micro controller/microprocessor is contained **(Page 12, Paragraph 280)**.

15. Consider claim 6 as applied to claim 3 above. O'Toole et al. and Weissman et al. disclose the claimed invention but fail to disclose "...wherein the electrical energy storage device is configured to receive and store electrical energy from the received radio-frequency signals." However Diorio et al. discloses an RFID tag with a power source (energy storage device) **(Figure 1)** that is powered by the radio-frequency signals transmitted by the RFID reader **(Page 9, Lines 9-14)**. In light of Diorio et al. it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole et al., Diorio et al. and Weissman et al. for the purpose of having a smaller sized RFID tag that can be more easily implemented in commercial products than active RFID tags that are larger in size.

Claims 4, 5, 10, 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. **(United States Patent Application Publication No. US 2006/0082445 A1)** in view of Diorio et al. **(United States Patent Application**

Publication No. US 2006/0145855 A1) in further view of Sorrells et al. **(United States Patent No. US 6,720,866 B1)**.

16. Consider claims 4 and 10 as applied to claims 1 and 7 above. O'Toole et al. and Diorio et al. disclose the claimed invention but fail to disclose a device "...wherein the at least one input pin is configured to be coupled to an external device for receiving input signals to be processed by the microprocessing circuit." However Sorrells et al. discloses digital inputs (input pin) for being coupled to a plurality of digital inputs (external device) **(Column 2, Lines 35-38)**. In light of Sorrells et al., it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole et al., Diorio et al. and Sorrells et al. for the purpose of integrating other devices with the RFID tag.

17. Consider claims 5,11 and 19 as applied to claims 4,10 and 16 above. O'Toole et al. and Diorio et al. disclose the claimed invention but fail to disclose "...wherein the microprocessor is configured to receive both analog and digital signals on the at least one input pin." However Sorrells et al. discloses an RFID device with an analog input that can be converted to receive digital inputs with the use of an analog to digital converter **(Column 2, Lines 50-54)**. In light of Sorrells et al., it would be obvious to one of ordinary skill in the art to combine the teachings of O'Toole et al., Diorio et al. and Sorrells et al. for the purpose of taking advantage of both the digital and analog systems.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. **(United States Patent Application Publication No. US 2006/0082445 A1)**, in view of Sorrells et al. **(United States Patent No. US 6,720,866 B1)** and in further view of Diorio et al. **(United States Patent Application Publication No. US 2006/0145855 A1).**

18. Consider claim 13. O'Toole et al. discloses a transponder device **(Page 11, Paragraph 270)** comprising an antenna that receives radio frequency signals **(Page 12 Paragraph 279, Lines 4-16)** and returns radio frequency signals via continuous wave backscatter **(Page 23, Paragraph 385, Lines 1-13)**.

O'Toole et al. discloses an integrated circuit consisting of a transmitter (modulation circuit) that modulates signals in response to received signals **(Page 12, Paragraph 279)**.

O'Toole et al. additionally discloses a microprocessor coupled to a receiver via a clock recovery and data recovery circuit **(Figure 5)**.

In response to received input signals, O'Toole et al. discloses a transmitting circuit that acts as a modulator in response to a received signal by an antenna **(Page 12, Paragraph 279)**. It is inherent in the functioning of O'Toole's invention that there be a signal (control signal) sent to the transmitting circuit (modulating means) in response to an input signal being received.

O'Toole et al. discloses the claimed invention but fails to disclose a "...means for processing at least one input signal received on at least one input pin adapted for connection to an external device,..." However Sorrells et al. discloses and RFID tag with an analog input that may be used for sensing signals from an analog sensor (external device) **(Column 2, Lines 50-67)**. In light of Sorrells et al. it would be obvious to combine the teachings of Sorrells et al. and O'Toole et al. for the purpose of integrating other devices with the RFID tag.

O'Toole et al. and Sorrells et al. combine to disclose the claimed invention, but fails to disclose the RFID tag "...configured to receive operating power from the received radio-frequency signals..." However, Diorio et al. discloses an RFID tag that receives it's power from radio-frequency signals transmitted by and RFID reader **(Page 9, Lines 9-14)**. In light of Diorio et al., it would be obvious to combine the teachings of O'Toole et al., Sorrells et al. and Diorio et al. for the purpose of allowing for smaller size of the RFID tag and lowering manufacturing cost.

Conclusion

19. Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

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401 Dulany Street

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20. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Awudzi Z. Agbottah whose telephone number is (571) 270-1114. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Awudzi Agbottah

A.Z.A./aza

RAFAEL PEREZ-GUTIERREZ
SUPERVISORY PATENT EXAMINER
8/16/06

August 10, 2006